

WHAT IS CLAIMED IS:

1. A multilayer film comprising a substrate bearing an aligned liquid crystal layer wherein the liquid crystal layer contains a Lewis acid.
2. The film of claim 1 wherein the Lewis acid is an aprotic acid.
3. The film of claim 2 wherein the Lewis acid contains an element from rows 1-5 of the Periodic Table.
4. The film of claim 2 wherein the Lewis acid contains an element from rows 1-4 of the Periodic Table.
5. The film of claim 2 wherein the Lewis acid contains an element from rows 1-3 of the Periodic Table.
6. The film of claim 2 wherein the Lewis acid contains an element from group 2a-7b or 2b-5a of the Periodic Table.
7. The film of claim 2 wherein the Lewis acid contains an element from group 2a-3b or 3a-4a of the Periodic Table.
8. The film of claim 2 wherein the Lewis acid contains an element from group 4b or 3a of the Periodic Table.
9. The film of claim 2 wherein the Lewis acid contains a compound of B, Al, Ti, Zr, Sn, Sb, Sc, La, or Zn.
10. The film of claim 2 wherein the Lewis acid contains a halogen or an organic ligand.
11. The film of claim 10 wherein the Lewis acid contains a halogen.

12. The film of claim 10 wherein the Lewis acid contains a fluoro or chloro group.
13. The film of claim 10 wherein the Lewis acid contains an organic ligand.
14. The film of claim 10 wherein the Lewis acid contains an organic ligand selected from CF_3SO_3^- , CH_3CO_2^- , and NO_3^- .
15. The film of claim 1 wherein the Lewis acid is a protic acid.
16. The film of claim 15 wherein the pKa of the protic acid is less than 10.
17. The film of claim 15 wherein the pKa of the protic acid is less than 0.
18. The film of claim 15 wherein the pKa of the protic acid is less than -5.
19. The film of claim 15 wherein the protic acid is selected from the group consisting of methanesulfonic acid, trifluoroacetic acid, acetic acid, and trifluoromethanesulfonic acid.
20. The film of claim 1 wherein the liquid crystal is nematic or discotic.
21. The film of claim 1 wherein the liquid crystal contains an ester, alkoxy or cyano group.

22. The film of claim 1 wherein the liquid crystal contains a cyano group.

23. The film of Claim 1 wherein the Lewis acid is represented by formula (II)



wherein:

M is an element from Group IIIa or IIIb of the Periodic Table;

n is equal to 1 or 2;

R is either the same or different C1 to C15 linear or cyclic group; and each X is the same or different halogen.

24. The film of Claim 1 wherein the Lewis acid is represented by formula (I)



wherein M is a Group IIB metal; and X is a halogen or organic ligand.

25. The film of Claim 1 wherein the Lewis acid is a salt or compound from Group IV of the Periodic Table of Elements represented by the general formula (III)



wherein M is a Group IVA or IVB metal and X is a ligand, preferably a halogen.

26. The film of Claim 1 wherein the Lewis acid is a salt or compound from Group VB and VA of the Periodic Table of Elements represented by the general formula (IV)



wherein M is a Group V metal, X is a ligand, and y is an integer from 3 to 5.

27. A process for imparting an increased tilt angle to a polymeric liquid crystal layer upon curing comprising including in that layer a Lewis acid salt or compound.

28. A process for imparting an increased tilt angle to a polymeric liquid crystal layer upon curing comprising including in that layer Lewis acid salt or compound according to claim 1.

29. The process of claim 27 wherein the Lewis acid salt or compound is present in an amount of at least 0.25 wt%.

30. The process of claim 28 wherein the Lewis acid salt or compound is present in an amount of at least 0.25 wt%.

31. An optical component comprising the film of claim 1.

32. The optical component of claim 31 further comprising a polarizer.

33. A liquid crystal display comprising the film of claim 1.